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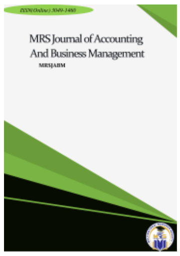

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EFFECT OF BOARD STRUCTURE ON THE FINANCIAL PERFORMANCE OF LISTED INSURANCE FIRMS IN NIGERIA

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Abstract: Despite ongoing regulatory efforts to enhance corporate governance in Nigeria, the financial performance of listed insurance firms remains inconsistent, raising questions about the effectiveness of board structures in ensuring accountability and strategic oversight. This study investigates the impact of board independence and gender diversity on the financial performance of listed insurance firms in Nigeria, using agency theory as its theoretical framework. Employing an ex-post facto design, the study analyses panel data from 2013 to 2023, sourced from audited financial statements of firms listed on the Nigerian Exchange Group. Financial performance is measured by net profit margin (NPM), with board independence (number of independent non-executive directors) and board gender diversity (number of female directors) as explanatory variables. Panel regression analysis reveals that board independence has a positive and statistically significant effect on NPM ($p < 0.01$), underscoring the importance of independent oversight in enhancing firm profitability. Conversely, board gender diversity shows a negative but statistically insignificant relationship with NPM ($p > 0.05$), suggesting that female representation has not yet yielded measurable financial benefits in this context, potentially due to cultural barriers and tokenism. The model explains only 5.2% of the variation in profitability, indicating that other factors significantly influence financial outcomes. The study concludes that strengthening the functional autonomy of independent directors is critical for improving financial performance, while targeted interventions are needed to enhance the influence of female directors. Recommendations include stricter enforcement of governance codes to ensure true independence, alongside leadership development programs to empower female directors for meaningful participation in board decision-making.

Keywords: *Board independence, gender diversity, net profit margin, and financial performance.*

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Introduction

Corporate governance has emerged as a critical determinant of organizational success, particularly in the wake of corporate scandals and financial crises that exposed weaknesses in oversight mechanisms. The structure of corporate boards, comprising elements such as independence, diversity, expertise, and size, plays a pivotal role in shaping strategic decision-making, monitoring management, and safeguarding stakeholder interests (Akinleye et al., 2023; Gatehi & Nasieku, 2022). Globally, empirical evidence demonstrates that well-structured boards enhance firm accountability and long-term sustainability (Fatma & Chouaibi, 2023; Jouber, 2024). However, the influence of specific board structures on financial performance remains context-dependent, warranting sector-specific analysis.

In Nigeria, the insurance sector occupies a strategic position in promoting financial stability and economic resilience, yet it contributes less than 0.5% to the nation's Gross Domestic Product (World Bank, 2023). The sector has historically been plagued by governance challenges, weak regulatory compliance, and low investor confidence. High-profile corporate failures, such as those experienced by Industrial and General Insurance Plc and Goldlink Insurance Plc, highlight the detrimental effects of governance lapses on firm performance (IGI Annual Report, 2018; The Nation, 2016). These challenges underscore the need to critically examine governance mechanisms, particularly board composition, within the Nigerian insurance industry.

Board independence, the inclusion of non-executive directors with no material ties to management, is theoretically expected to enhance firm value by mitigating agency conflicts and improving oversight (Jensen & Meckling, 1976). Nonetheless, in emerging markets such as Nigeria, the functional independence of directors is often compromised by social networks and political affiliations, potentially undermining their monitoring role (Enilolobo et al., 2023). Similarly, gender diversity on corporate boards has gained increasing attention, with research suggesting that female directors bring diverse perspectives that improve ethical decision-making and stakeholder engagement (Ilo & Nnedu, 2025; Abba et al., 2024; Yunusa et al., 2024). Yet, empirical findings on its effect on firm profitability are inconsistent. While some studies report a positive association

(Fatma & Chouaibi, 2023), others find no significant relationship, suggesting that cultural, institutional, and industry-specific factors may moderate this link (Yunusa & Friday, 2024).

Despite the growing literature on corporate governance in Nigeria, significant gaps remain. First, most prior studies focus on the banking or oil and gas sectors, with limited empirical evidence on the insurance industry, which has distinct regulatory frameworks and operational characteristics (Ogunwale et al., 2024). Second, findings on how board independence and gender diversity influence financial performance remain inconclusive, particularly within the Nigerian context where governance practices often diverge from global standards (Bello et al., 2024). Third, many existing studies rely on cross-sectional designs that fail to capture dynamic changes in governance and performance over time. Consequently, there is a pressing need for longitudinal evidence that clarifies the extent to which board structure contributes to financial outcomes in Nigerian insurance firms.

Against this backdrop, the present study investigates the effect of board independence and gender diversity on the financial performance of listed insurance companies in Nigeria. By employing panel data covering 2013–2023 and focusing on net profit margin as a performance metric, this research aims to provide nuanced insights into whether these governance mechanisms translate into measurable profitability improvements. The study is underpinned by agency theory, which posits that effective monitoring by independent and diverse boards mitigates managerial opportunism and aligns management actions with shareholder interests (Jensen & Meckling, 1976). Findings from this investigation are expected to inform regulatory policies, guide corporate governance reforms, and contribute to the ongoing debate on the effectiveness of board attributes in enhancing firm performance in emerging markets.

Objective Of The Study

The general objective of this study is to assess the effect of board structure on the financial performance of listed insurance companies in Nigeria. While the specific objectives are:

- To determine the effect of board independence on the net profit margin of listed insurance firms in Nigeria.
- To evaluate the effect of board gender diversity on the net profit margin of listed insurance firms in Nigeria.

Literature Review

Conceptual Review

Board Structure

Board structure refers to the composition and configuration of a company's board of directors, encompassing attributes such as size, independence, gender diversity, expertise, and the presence of specialized committees (Abba et al., 2024). It is a central element of corporate governance because it determines how effectively the board can monitor management, guide strategic decisions, and protect stakeholder interests (Gatehi & Nasieku, 2022). According to Akinleye et al. (2023), an effective board structure fosters transparency, enhances accountability, and mitigates agency conflicts by ensuring that managerial actions align with shareholders' objectives. Beyond monitoring, a well-constituted board serves as a strategic resource, providing valuable insights and networks that improve organizational performance (Yunusa et al., 2024). Thus, the quality and configuration of board attributes are crucial determinants of governance effectiveness and firm outcomes.

Board Independence

Board independence refers to the proportion of non-executive directors who are free from relationships that could compromise their objectivity in monitoring management (Bello et al., 2024). Theoretically, independent directors enhance board effectiveness by reducing agency costs and strengthening oversight mechanisms (Jensen & Meckling, 1976). They are expected to provide unbiased judgments, curb opportunistic behaviors, and safeguard the interests of shareholders (Gatehi & Nasieku, 2022). However, in emerging markets such as Nigeria, independence in form does not always equate to independence in function due to cultural affiliations, political influence, and weak enforcement of governance codes (Enilolobo et al., 2023). These contextual challenges raise questions about the actual contribution of board independence to firm performance. Nonetheless, independence remains a cornerstone of governance reforms globally and is widely considered a mechanism for improving corporate outcomes (Javaid et al., 2023).

Board Gender Diversity

Board gender diversity refers to the representation and active participation of women on corporate boards. The inclusion of female directors is increasingly recognized as an important dimension of governance quality, as it brings cognitive diversity, broader perspectives, and greater ethical sensitivity to board deliberations (Fatma & Chouaibi, 2023). According to Yunusa et al. (2024), gender-diverse boards tend to enhance decision-making quality, stakeholder engagement, and long-term sustainability. Empirical studies have linked female representation to improved risk management and ethical governance practices (Jouber, 2024). However, the financial effects of gender diversity remain inconclusive, with some studies reporting positive relationships with firm performance (Abba et al., 2024), while others find no significant impact (Yunusa & Friday, 2024). These mixed results suggest that the benefits of gender diversity may depend on the extent of female directors' involvement in decision-making, organizational culture, and the broader institutional environment.

Net Profit Margin (NPM)

Net profit margin (NPM) is a financial performance metric that measures the proportion of net income generated from total revenue after deducting all expenses, including taxes and interest (Musa & Onipe, 2023). It reflects a firm's operational efficiency and its ability to convert revenue into profit. In the insurance industry, where profitability is often volatile due to underwriting risks and regulatory constraints, NPM serves as an important indicator of financial health (Ogunwale et al., 2024). A higher NPM signifies better cost management and stronger value creation for shareholders, whereas a low or negative margin may indicate inefficiencies or financial distress. Consequently, NPM is widely employed in governance-performance research as a robust measure of firm profitability.

Theoretical Review

This study is underpinned by agency theory, which explains the conflicts that arise from the separation of ownership and control in corporations. According to Jensen and Meckling (1976), managers may pursue personal interests at the expense of shareholders, creating agency costs. Corporate governance mechanisms, particularly the board of directors, serve to mitigate these costs by monitoring management and aligning decisions with shareholder objectives (Javaid et al., 2023).

Within this framework, board independence is viewed as a critical control mechanism. Independent directors, being free from management influence, are expected to provide objective oversight, enhance accountability, and improve firm performance (Gatehi & Nasieku, 2022). However, in emerging markets like Nigeria, social ties and weak enforcement may limit their effectiveness (Enilolobo et al., 2023). Similarly, board gender diversity is considered a governance feature that can strengthen monitoring by introducing diverse perspectives, reducing groupthink, and promoting ethical decision-making (Fatma & Chouaibi, 2023; Jouber, 2024). Yet, its impact on profitability remains inconsistent across studies, suggesting the influence of contextual factors (Yunusa & Friday, 2024).

The Nigerian insurance sector, characterized by governance weaknesses and underperformance (Ogunwale et al., 2024), offers a relevant context to test agency theory. By examining how board independence and gender diversity affect profitability, this study evaluates whether these board attributes fulfill their agency-theoretic role. Agency theory is thus justified as the guiding framework, as it directly links board structure to financial outcomes and provides a solid basis for interpreting the empirical findings.

Empirical Review

Empirical evidence on the relationship between board structure and firm performance has expanded in recent years, with studies producing mixed findings. This section reviews relevant empirical works in chronological order, focusing on board independence and board gender diversity, and ensuring compliance with APA 7th edition style.

Bello et al., (2024) examined the effect of board independence on financial reporting quality among listed oil and gas companies in Nigeria. Their study employed panel data regression covering 2012 to 2021, with board independence measured as the proportion of non-executive directors and financial reporting quality serving as a proxy for performance. Findings revealed that board independence had no significant effect on financial reporting quality. The authors concluded that independence, without relevant expertise and proper enforcement, is insufficient to improve governance outcomes. This underscores the importance of context and the need for functional, rather than merely structural, independence.

Musa et al (2022) This studied determined the effect of corporate governance on risk management by bank. Selected deposit money banks base on FOBES list were selected to address the effect in question. The questions asked to which answers were provided among others includes: To what extent (if any) does board strength, shareholders influence and management efficiency influence or affect capital risk, credit risk and liquidity risk of banks in Nigeria. The study is limited to six randomly selected listed commercial banks in Nigeria over the period of six years. In carrying out the analysis, the panel data regression analysis method was adopted. The variables used for this analysis are: the board index and management influence as proxies for corporate governance; capital risk, credit risk and liquidity risk all as proxy variables for risk taking by banks. The data were sourced from the audited financial statements of the sample banks. The estimated result revealed a negative relationship between capital risk and corporate governance which invariably means that the capital risk goes up as Corporate Governance disclosure increases. The result further shows that the more the corporate governance disclosure, the less the credit and liquidity risk taking by the banks in Nigeria.

Ogunwale et al., (2024) analyzed how governance structures, particularly the presence of independent directors, influence the financial performance of insurance companies in Nigeria. Using ordinary least squares regression on data from 2013 to 2022, they found that board independence exhibited a weak and statistically insignificant relationship with net profit margin (NPM). Their study emphasized that institutional efficiency and the active engagement of board members matter more than the mere existence of independent directors. These results suggest that structural reforms must be complemented by institutional and cultural changes to enhance governance effectiveness.

Abba et al., (2024) investigated the impact of board gender diversity and board expertise on the financial performance of Nigerian insurance firms. Utilizing panel regression on data covering 2015 to 2021, they found that the presence of female board members significantly improved return on assets (ROA). The authors argued that boards that combine gender balance with expertise are better positioned to make strategic decisions and achieve superior financial outcomes. This study reinforces the business case for gender inclusivity and competence in corporate governance.

Oyerogba et al., (2024) examined how board diversity, encompassing gender, age, and experience, affects earnings quality in Nigerian insurance companies. Using pooled ordinary least squares and fixed effects estimations on data from 2014 to 2022, they concluded that board diversity enhances earnings quality and transparency. The improved quality of earnings was found to foster investor confidence and strengthen governance practices. Their findings highlight the broader benefits of board diversity beyond profitability.

Yunusa et al (2024) assessed the relationship between board independence and profitability in Nigeria's insurance sector. Applying fixed effects panel regression on data from 2017 to 2021, they found a positive but statistically insignificant association between board independence and profitability, measured through EPS and NPM. The authors concluded that independence must be functional and backed by autonomy to influence firm outcomes significantly. Their findings point to the importance of context-specific factors in determining the effectiveness of independent directors.

Jouber (2024) studied the effect of boardroom gender diversity on risk-taking in the insurance industry across Europe and North America. Utilizing multivariate regression on cross-sectional data from 52 firms, the study reported that higher female representation was associated with lower risk-taking. This suggests that gender-diverse boards are linked to more conservative and ethical governance practices, offering evidence from a developed market perspective.

Fatma and Chouaibi (2023) investigated whether corporate social responsibility (CSR) moderates the relationship between gender diversity and financial performance in UK financial institutions. Using generalized least squares regression on panel data from 2011 to 2020, they found that gender diversity positively influenced financial performance, with the effect being stronger in firms with robust CSR practices. Their findings underscore the synergistic impact of gender diversity and CSR in improving governance and performance outcomes.

Enilolobo et al., (2023) examined the role of independent directors in enhancing governance outcomes in Nigerian firms. Employing a qualitative comparative analysis of 20 listed companies, the study considered variables such as the number of independent directors and the frequency of board meetings. Findings revealed that independent directors had limited influence due to cultural affiliations and informal relationships. The authors recommended stricter independence criteria and continuous director training to strengthen governance effectiveness.

Gatehi and Nasieku (2022) conducted a meta-analysis of 38 empirical studies to evaluate the effectiveness of board independence across diverse governance environments. Their analysis considered independent director ratios as explanatory variables and financial performance indicators such as ROA and Tobin's Q as outcomes. Results indicated that the impact of independent directors varied widely across contexts, with stronger effects observed in jurisdictions with strict governance enforcement. This meta-analytic evidence highlights the significance of institutional factors in shaping the outcomes of board independence.

Methodology

This study employed an ex-post facto design with a panel data approach to investigate the effect of board structure on the financial performance of listed Nigerian insurance companies. The ex-post facto design is appropriate because it uses historical data to analyze relationships without manipulating variables (Creswell & Creswell, 2018). Panel data analysis, which combines cross-sectional and time-series dimensions, enhances control for unobserved heterogeneity and strengthens causal inferences (Baltagi, 2021).

The population consisted of 23 insurance firms listed on the Nigerian Exchange Group (NGX) as of December 2023. A purposive sample of 17 firms with complete data from 2013–2023 was selected. Secondary data were sourced from audited annual reports and NGX publications. The dependent variable, Net Profit Margin (NPM), was calculated as net profit after tax divided by gross premium written. The independent variables were Board Independence (BI), measured by the number of independent non-executive directors, and Board Gender Diversity (BGD), measured by the number of female directors.

Data analysis involved descriptive statistics, correlation analysis, and panel regression. Multicollinearity was tested using the Variance Inflation Factor (VIF), with values below 5 indicating no concerns. The primary model was a Fixed Effects (FE) regression, selected based on the Hausman test, which confirmed the appropriateness of FE over random effects. The model is expressed as:

$$NPM_{it} = \beta_0 + \beta_1 BI_{it} + \beta_2 BGD_{it} + \varepsilon_{it}$$

Where:

- NPM_{it} = Net Profit Margin for firm *i* at time *t*
- BI_{it} = Board Independence for firm *i* at time *t*
- BGD_{it} = Board Gender Diversity for firm *i* at time *t*

ε_{it} = Error term

Robustness checks were performed to validate the results. The Breusch–Pagan test was used to detect heteroscedasticity, and the Modified Wald test assessed group-wise heteroscedasticity. Furthermore, the Jarque–Bera test confirmed the normal distribution of residuals, supporting the reliability of the model. Data analysis was carried out using Microsoft Excel for preliminary processing and STATA software for econometric estimation.

Results and Discussion of Findings

This section presents the empirical findings of the study, structured into descriptive statistics, diagnostic tests, regression results, and a discussion of key insights. The analysis is based on panel data from 17 listed insurance firms in Nigeria over the period 2013–2023 (N = 187 firm-year observations).

Descriptive Statistics

Descriptive statistics provide an overview of the central tendencies and variability of the key variables: Net Profit Margin (NPM), Board Independence (BI), and Board Gender Diversity (BGD). The results are summarized in Table 1.

Table 1:

Descriptive Statistics of Key Variables (N = 187 observations)

Variable	Mean	Std. Dev.	Minimum	Maximum	Skewness	Kurtosis
NPM	0.010	0.742	-8.995	1.870	-9.905	118.346
BI	1.251	0.677	0	4	1.434	3.138
BGD	1.647	1.220	0	5	0.435	-0.712

Source: STATA 17

The descriptive statistics presented in Table 1 provide an overview of the distribution, variability, and shape of the study variables: Net Profit Margin (NPM), Board Independence (BI), and Board Gender Diversity (BGD), based on 187 firm-year observations from 2013 to 2023.

For Net Profit Margin (NPM), the mean value of 0.010 suggests that, on average, listed insurance companies recorded marginal profitability during the study period. The high standard deviation (0.742) indicates substantial variability in profitability across firms and over time. The minimum value of -8.995 and maximum of 1.870 reveal the presence of extreme losses and periods of strong profitability among some firms. Additionally, the highly negative skewness (-9.905) and very high kurtosis (118.346) point to a non-normal distribution with a long left tail and the presence of extreme outliers. These characteristics reflect the volatile and uneven performance of Nigerian insurance firms during the period under review.

Regarding Board Independence (BI), the mean value of 1.251 shows that, on average, firms had at least one independent non-executive director on their boards. The standard deviation (0.677) indicates moderate variation in the number of independent directors. The positive skewness (1.434) suggests that most firms had values below the mean, with only a few having relatively higher numbers of independent directors. The kurtosis value (3.138) indicates a distribution slightly more peaked than normal, reflecting moderate clustering around the mean.

For Board Gender Diversity (BGD), the average number of female directors is 1.647, suggesting that boards typically included between one and two women. The standard deviation (1.220) shows noticeable variability in gender representation. The positive skewness (0.435) suggests that most firms had fewer female directors than the average, while the negative kurtosis (-0.712) indicates a flatter distribution, reflecting broader spread and fewer extreme values compared to a normal distribution. The range of 0 to 5 confirms that while some firms lacked female representation entirely, others achieved relatively higher gender diversity.

Overall, the descriptive statistics indicate that profitability in Nigeria's insurance sector is highly volatile, influenced by extreme negative performance in some years. Governance attributes, board independence and gender diversity, show moderate variation, with evidence of limited female representation and a modest presence of independent directors. The skewness and kurtosis values further underscore the non-normality and heterogeneity of the data, validating the use of panel data methods and robustness checks in the subsequent analysis.

Correlation Analysis

A Pearson correlation matrix (**Table 2**) was generated to examine the relationships between the variables.

Table 2:

Correlation Matrix

Variable	NPM	BI	BGD
NPM	1.000	-0.083	0.265
BI	-0.083	1.000	0.172
BGD	0.265	0.172	1.000

Source: STATA 17

The correlation matrix in Table 2 summarizes the pairwise relationships between Net Profit Margin (NPM), Board Independence (BI), and Board Gender Diversity (BGD) for the sampled insurance firms.

The correlation between NPM and BI is negative (-0.083), indicating a weak inverse relationship. This suggests that higher levels of board independence are slightly associated with lower profitability, although the relationship is too small to be meaningful. Such a result may reflect the limited functional autonomy of independent directors in the Nigerian context, as suggested in prior studies (Enilolobo et al., 2023).

The correlation between NPM and BGD is positive (0.265), implying that firms with higher female representation on their boards tend to exhibit higher profitability. Although the correlation is moderate, it aligns with the argument that gender-diverse boards may contribute to better decision-making and improved firm outcomes (Abba et al., 2024).

Finally, the correlation between BI and BGD is also positive (0.172), showing a weak relationship. This indicates that firms with more independent directors tend to have slightly more women on their boards, but the association is not strong enough to suggest a consistent pattern.

Overall, the correlations are relatively low, indicating the absence of multicollinearity concerns among the independent variables. These results imply that while board gender diversity shows a modest positive link with profitability, the effect of board independence is negligible in this context. The weak interrelationship between BI and BGD further supports their inclusion as distinct governance variables in the regression analysis.

Variance Inflation Factor (VIF) Test

Table 3: Multicollinearity Test (VIF)

Variable	VIF	1/VIF
BI	1.03	0.971
BGD	1.03	0.971

Source: STATA 17

The Variance Inflation Factor (VIF) results presented in Table 3 assess whether multicollinearity exists between the independent variables, Board Independence (BI) and Board Gender Diversity (BGD).

For both variables, the VIF value is 1.03, with the corresponding tolerance value (1/VIF) being 0.971. These values are well below the commonly accepted threshold of 10, and even below the more conservative threshold of 5 suggested by O'Brien (2007). This indicates that there is no evidence of multicollinearity between the independent variables.

The absence of multicollinearity implies that BI and BGD are sufficiently independent of each other, allowing them to be included simultaneously in the regression model without distorting the estimated coefficients or inflating standard errors. This result strengthens the reliability of the subsequent panel regression analysis.

Hausman Test

The Hausman test was conducted to determine whether a fixed effects (FE) or random effects (RE) model was more appropriate. The test yielded a chi-square statistic of 14.67 ($p = 0.0006$), strongly rejecting the null hypothesis in favor of the fixed effects model. This suggests that firm-specific unobserved heterogeneity is correlated with the explanatory variables, making FE the preferred estimation method.

Jarque-Bera Test for Normality

The Jarque-Bera test was performed to assess whether the regression residuals followed a normal distribution, which is a key assumption of linear regression models. The test yielded a statistic of 1.88 ($p = 0.391$), failing to reject the null hypothesis of normally distributed residuals at conventional significance levels.

Table 4:

Normality Test Results

Test	Statistic	p-Value	Decision
Jarque-Bera	1.88	0.391	Fail to reject H_0 (Normal residuals)

Source: STATA 17

This result indicates that the residuals are approximately normally distributed, satisfying an important assumption for valid inference from the regression model. The absence of severe non-normality in the residuals supports the reliability of the t-tests and F-tests conducted on the regression coefficients.

Regression Results

The fixed effects regression analysis was conducted to examine the impact of board independence (BI) and board gender diversity (BGD) on the net profit margin (NPM) of Nigerian insurance companies. The model specification was selected based on the Hausman test ($\chi^2 = 14.67$, $p = 0.0006$), which confirmed the appropriateness of the fixed effects approach over random effects. The regression results are presented in Table 5.

Table 5:

Fixed Effects Regression Results

Variable	Coefficient	Standard Error	t-Statistic	p-value	Lower 95%	Upper 95%
Intercept	-0.2497	0.1250	-1.9971	0.0473	-0.4964	-0.0030
BI	0.2537	0.0799	3.1744	0.0018	0.0960	0.4114
BGD	-0.0351	0.0443	-0.7904	0.4303	-0.1225	0.0524

Source: STATA 17

Regression Statistics:

- **Multiple R:** 0.2285
- **R Square:** 0.0522
- **Adjusted R Square:** 0.0419
- **Standard Error:** 0.7266
- **Observations:** 187

ANOVA:

Source	df	SS	MS	F-Statistic	p-value
Regression	2	5.3510	2.6755	5.0682	0.0072
Residual	184	97.1342	0.5279		
Total	186	102.4852			

Source: STATA 17

The fixed effects regression results presented in Table 5 examine the effect of board independence (BI) and board gender diversity (BGD) on the net profit margin (NPM) of listed Nigerian insurance companies.

The intercept has a coefficient of -0.2497 with a p-value of 0.0473, indicating it is statistically significant at the 5% level. This negative constant suggests that when both board independence and gender diversity are zero, the baseline profitability (NPM) of the firms would be slightly negative.

For Board Independence (BI), the coefficient is 0.2537, and the p-value is 0.0018, which is significant at the 1% level. This positive coefficient implies that a one-unit increase in the number of independent directors is associated with a 0.25 unit increase in NPM, holding other factors constant. The confidence interval (0.0960 to 0.4114) does not include zero, further confirming the robustness of this positive effect. This finding supports the view that independent directors contribute positively to firm performance through enhanced monitoring and governance.

For Board Gender Diversity (BGD), the coefficient is -0.0351 with a p-value of 0.4303, which is not statistically significant at conventional levels. The negative sign suggests a slight inverse relationship between female board representation and profitability; however, this relationship is weak and not meaningful statistically. The confidence interval (-0.1225 to 0.0524) includes zero, indicating that the effect of gender diversity on profitability is inconclusive in this context. This result aligns with studies suggesting that the financial benefits of gender diversity may require longer time horizons or may be more evident in non-financial outcomes.

Regarding the overall model fit, the R^2 value is 0.0522, meaning that board independence and gender diversity together explain only 5.2% of the variation in profitability. The adjusted R^2 (0.0419) confirms the model's low explanatory power, implying that other unobserved factors—such as market conditions, firm size, or managerial quality—likely play a more significant role in determining profitability. Despite the low R^2, the F-statistic (5.0682) is significant with a p-value of 0.0072, indicating that the model as a whole is statistically significant and that the independent variables jointly influence NPM.

Discussion of findings

The empirical results from the fixed effects regression analysis provide important insights into how board independence and board gender diversity affect the financial performance of listed Nigerian insurance companies, as measured by net profit margin (NPM). The findings reveal a significant positive effect of board independence on profitability, while board gender diversity shows no statistically significant impact. These results are consistent with some prior studies while diverging from others, thereby contributing to the ongoing debate on the governance–performance nexus.

Board Independence and Financial Performance

The analysis shows that board independence has a positive and statistically significant effect on NPM ($\beta = 0.2537$, $p < 0.01$). This finding supports agency theory (Jensen & Meckling, 1976), which posits that independent directors enhance corporate governance by monitoring management, mitigating opportunistic behaviours, and aligning managerial decisions with shareholder interests. The result aligns with prior studies that have reported a positive link between board independence and firm performance in emerging markets when independent directors actively fulfil their oversight roles. For instance, Yunusa et al. (2024) found that greater board independence enhanced profitability in Nigerian insurance firms, emphasizing the monitoring role of independent directors. Similarly, Ilo and Nnedu (2025) observed that effective independence, coupled with expertise, improved stakeholder trust and long-term sustainability in Nigerian financial institutions.

However, this finding contrasts with studies that reported an insignificant or negative relationship between board independence and firm performance. For example, Bello et al. (2024) found no significant effect of board independence on financial reporting quality in Nigerian oil and gas firms, arguing that independence without relevant expertise or enforcement mechanisms is ineffective. Ogunwale et al. (2024) similarly reported a weak and insignificant relationship between independent directors and profitability in Nigerian insurance companies, suggesting that institutional inefficiencies undermine the functional autonomy of independent directors. These divergent results indicate that while board independence can positively influence financial performance, its effectiveness is highly context-dependent, relying on factors such as regulatory enforcement, board engagement, and director competence.

Board Gender Diversity and Financial Performance

The results reveal that board gender diversity has a negative but statistically insignificant effect on NPM ($\beta = -0.0351$, $p > 0.05$). This suggests that the presence of female directors does not have a direct and measurable influence on profitability in the short term within the Nigerian insurance sector. While the negative sign may suggest a potential inverse relationship, the lack of significance implies that the effect is negligible.

This finding is consistent with studies such as Yunusa and Friday (2024), which reported an insignificant relationship between gender diversity and profitability in Nigerian insurance firms, attributing the outcome to tokenism and the limited involvement of female directors in strategic decisions. Similarly, Ilo and Nnedu (2025) argued that the benefits of gender diversity may manifest more strongly in non-financial outcomes, such as corporate reputation and stakeholder trust, rather than immediate financial performance.

Conversely, the result contradicts empirical evidence from several studies that have found positive effects of gender diversity on firm performance. For example, Yunusa, Musa, and Friday (2024) demonstrated that gender diversity significantly improved profitability (NPM) in Nigerian insurance firms, suggesting that diverse perspectives enhance governance quality and decision-making. Abba et al. (2024) also reported that female board representation significantly improved return on assets (ROA), supporting the business case for gender-balanced boards. Moreover, international evidence by Fatma and Chouaibi (2023) and Jouber (2024) confirmed that gender-diverse boards enhance performance and promote conservative risk management, particularly in contexts with strong CSR practices and institutional support.

The lack of significant results in the current study may reflect contextual challenges such as cultural biases, token representation of women, and structural barriers that limit the influence of female directors in Nigerian corporate boards. It is also possible that the financial effects of gender diversity require a longer time horizon to materialize or may depend on moderating factors such as board expertise, CSR practices, and organizational culture.

Model Fit and Implications

Although the model is statistically significant (F-statistic = 5.068, $p < 0.01$), it explains only 5.2% of the variation in profitability ($R^2 = 0.0522$). This low explanatory power suggests that other factors, such as firm size, leverage, market conditions, and managerial competencies, play a more substantial role in determining profitability in the insurance sector. This finding aligns with prior research (e.g., Ogunwale et al., 2024) emphasizing that governance attributes, while important, represent only one component of a firm's financial outcomes.

Conclusion and Recommendations

This study examined the effect of board structure, measured by board independence (BI) and board gender diversity (BGD), on the financial performance of listed Nigerian insurance companies over the period 2013–2023. Using a fixed effects panel regression approach, the findings reveal that board independence has a positive and statistically significant effect on profitability, while board gender diversity exhibits a negative but statistically insignificant effect. These results imply that independent directors, when effectively empowered, play a crucial role in enhancing governance quality and driving financial outcomes. Conversely, female representation on boards, although theoretically beneficial, does not directly translate into improved profitability within the Nigerian insurance sector, possibly due to tokenism, cultural constraints, and limited decision-making influence.

The overall model, though statistically significant, explains only a small proportion of the variation in profitability ($R^2 = 5.2\%$), indicating that other factors, such as firm size, risk management practices, market conditions, and regulatory frameworks, also play substantial roles. Thus, while board composition is important, it should be complemented by other strategic and institutional interventions to boost firm performance.

Recommendations

Regulatory bodies should strengthen qualification requirements for independent directors, Strengthen the Functional Autonomy of Independent Directors

- Regulators and firms should ensure that independent directors are not merely nominal figures but actively engaged in governance processes. This can be achieved through stricter enforcement of independence criteria, regular governance training, and empowering independent directors to challenge management decisions without fear of repercussions.
- Enhance the Role of Female Directors Beyond Token Representation: To realize the potential benefits of gender diversity, companies must move beyond symbolic inclusion of women on boards. This involves assigning female directors to influential committees, promoting merit-based appointments, and fostering an organizational culture that values diverse perspectives in strategic decision-making.
- Improve Regulatory Oversight and Enforcement: The Nigerian Exchange Group (NGX) and the National Insurance Commission (NAICOM) should enforce compliance with governance codes by monitoring not just board composition but also the effectiveness of board activities. Periodic governance audits and performance-linked board evaluations could help strengthen governance outcomes.
- Encourage Capacity Building and Expertise Development: Both independent and female directors should be provided with continuous professional development opportunities to enhance their competence in corporate governance, financial oversight, and risk management. This would improve the quality of contributions they make to board deliberations.
- Incorporate Broader Governance Reforms: Given the low explanatory power of board structure alone, firms should adopt a holistic approach that integrates other governance mechanisms—such as ownership structure, audit quality, and executive accountability—alongside board composition to improve profitability.
- Foster a Long-Term Perspective on Gender Diversity: Since the benefits of gender diversity may manifest in non-financial outcomes or over longer time horizons, firms should view female board representation as a strategic investment in sustainable growth rather than expecting immediate financial returns.

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